# Clark County, Washington

# National Pollutant Discharge Elimination System (NPDES) Annual Report for 2004

**Submitted in compliance with National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1**

**June 30, 2005**

**Clark County Public Works Department**
**Vancouver, Washington**

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**STATEMENT OF CERTIFICATION**

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____

County Administrator

## INTRODUCTION

Clark County's National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit includes a requirement for an annual report to verify compliance with the permit requirements to perform the tasks of the stormwater management program (SWMP) and specific permit requirements.

This document is the annual report for the reporting period of January 1, 2004 to December 31, 2004. It is the sixth annual report under Clark County's permit. The Washington Department of Ecology (Ecology) extended Clark County's permit coverage from its expiration date of December 31, 2000 to issuance of the next permit. The county filed a notice of intent to receive permit coverage as a part of the June 2000 annual report.

## ANNUAL REPORT REQUIREMENTS

The following section lists the permit requirements for the annual report (Special Condition S.8.) and subsequent sections describe how the county meets the annual report requirements. Permit compliance reporting is made complex by overlapping permit requirements, multiple departments performing different parts of permit components, and the reality that specific permit components are parts of broader county work programs.

### S8. Stormwater Management Program Annual Report Requirements

*A. The permittee shall submit an annual report by July 1, 2000 and annually thereafter. Any information in the report readily distinguished by water quality management areas should be presented as such.*

*B. The report shall include the following sections:*

*1. Status of implementing the components of the approved Stormwater Management Program (SWMP), including the status of compliance with the approved implementation schedule described in Special Condition S9, and a description and rationale of any program modifications made, other than those submitted for approval under Special Condition S5.A;*

*2. Notification of any recent or proposed annexations or incorporations resulting in an increase or decrease in permit coverage area, and implications for the SWMP;*

*3. Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP;*

*4. Revisions, if necessary, to the fiscal analysis reported in the SWMP;*

*5. A summary and analysis of the cumulative monitoring data collected throughout the term of the permit;*

a. *If the permittee monitors any pollutant more frequently than required by the SWMP, then the results of this monitoring shall be included in the report.*

b. *If the permittee conducts any other stormwater monitoring in addition to that required in the SWMP, then it shall provide a description of the additional monitoring in the report.*

6. *A summary describing compliance activities, including the nature and number of official enforcement actions, inspections, and types of public education activities;*

7. *Identification of known water quality improvements or degradation; and*

8. *The status of watershed-wide coordination and activities which the permittee has undertaken individually or jointly. The report shall include proposed management measures to enhance regional coordination and/or address regional stormwater problems that will be implemented during the term of the next permit.*

The numbered sections of this report correspond with the numbered annual report requirements described in the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1, with the exception that annual report content requirements S8.B.1. (status of permit components), S8.B.5. (summary of monitoring results), and S8.B.6. (summary of compliance measures) are combined to simplify presentation.

## 1. STATUS OF PERMIT COMPONENTS

The permit-defined stormwater management program components are listed, followed by a description of the status of compliance, including a section for activities scheduled under Condition S9.

The stormwater management program, submitted to Ecology in 1998 as the permit application, included permit-mandated activities and several water resource and habitat protection and enhancement activities not required by the permit. This report focuses on stormwater management program activities that are NPDES permit requirements, excluding activities that are not permit requirements.

### S5.B.1. Comprehensive Planning Process

Permit Requirement

*A description of a comprehensive planning process used to develop the stormwater management program including public participation, intergovernmental coordination, and the relationship to other planning processes.*

Summary of Compliance Activities

The requirement for a comprehensive planning process to develop the stormwater management program was met by developing the 1999 NPDES stormwater management program submitted as the Part 2 application. When Ecology issues a new permit, the county will be required to revise its stormwater management program.

This component also includes the ongoing activities of the Clark County Clean Water Commission, created by the Clark County Board of County Commissioners to advise them on issues related to stormwater fee expenditures.

**S5.B.2. Management Needs and Priorities**

Permit Requirement

*An analysis of stormwater management needs, a system for prioritizing needs, a description of the basis for the priority system, and an implementation plan and schedule for the term of the permit that reflect the priority needs. The stormwater management program must have an appropriate balance between prevention and correction based upon available information about sources of pollution and discharges from municipal separate storm sewers owned or operated by the permittee.*

Summary of Compliance Activities

This requirement was performed for the 1999 NPDES stormwater management program submitted for the Part 2 application. The stormwater management program implements the highest priority activities.

**S5.B.3. Legal Authority**

Permit Requirement

*Adequate legal authority to control discharges to and from municipal separate storm sewers owned or operated by the permittee. This legal authority, which may be a combination of statute, ordinance, permit, contract, order, or inter-jurisdictional agreements with other permittees which have existing legal authority, shall include the ability to:*

1. *Control the contribution of pollutants to municipal separate storm sewers owned and operated by the permittee from stormwater discharges associated with industrial activity, and control the quality of stormwater discharged from sites of industrial activity;*
2. *Prohibit illicit discharges to the municipal separate storm sewer owned or operated by the permittee;*
3. *Control the discharge of spills and the dumping or disposal of materials other than stormwater into the municipal separate storm sewers owned or operated by the permittee;*
4. *Control through interagency agreements or inter-jurisdictional agreements among permittees, the contribution of pollutants from one municipal separate storm sewer to another;*

5. *Require compliance with the conditions in ordinances, permits contracts, or orders; and*
6. *Within the limitations of state law, carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with local ordinances.*

Summary of Compliance Activities

In 1998, Clark County adopted an ordinance prohibiting illicit discharges into its storm sewer system. This ordinance has been kept in effect and enforced since 1998.

**S5.B.4. Monitoring Program**

Permit Requirement

*A program to monitor the effectiveness of the stormwater management program in reducing pollutants discharged and reducing impacts to surface waters, ground waters, and sediments. The monitoring program, based upon the priorities identified in Special Condition S5.B.2. and specific actions required in Special Condition S9.C., shall address field evaluation, sampling, and analysis to:*

1. *Estimate concentrations and loads from representative areas or basins to be used in evaluating overall program effectiveness;*
2. *Evaluate the effectiveness of selected Best Management Practices (BMPs);*
3. *Identify specific sources of pollution; and*
4. *Identify the degree to which stormwater discharges are impacting selected receiving waters and sediments.*

*The monitoring program shall include a quality assurance/quality control plan.*

Summary of Compliance Activities and Summary Cumulative Data

The Water Resources Program of the Clark County Public Works Department performs the monitoring program. During 2004, the monitoring program continued current monitoring activities, completed a watershed characterization project in cooperation with the Lower Columbia Fish Recovery Board, and began several new projects and activities. Each project or activity follows a quality assurance/quality control plan and most follow a Quality Assurance Project Plan based on the Washington Department of Ecology guidance manual. Many of the QAPPs and reports from projects are on the Monitoring Reports and Publications Web page:
http://www.co.clark.wa.us/water-resources/monitoring/reportspublic.html

*Measured parameters, indicators, and procedures*

The stormwater management program has a standardized set of biological, water quality, and physical habitat parameters and indicator metrics. Standard procedures were developed and are followed to collect environmental data. The parameters form the basic environmental measurement tools for the stormwater program.

*Continuous Stream Flow Gauges*

Stream flow gauges provide a means to continuously measure stream stage and flow. This information is used to describe drainage basin hydrology for various purposes and to calibrate computerized hydrology models needed to design new stormwater facilities and predict stream flow for proposed development conditions. Flow data for water quality monitoring sites can also be used to estimate instantaneous loads and approximate loads for longer periods of time. Gauges are placed in basins of interest for stormwater management and at locations monitored as Long-Term Index Sites.

| Clark County Stream Gauge Location | Site Name | Watershed |
|---|---|---|
| Lacamas Creek at NE 217th Avenue | LAC080 | Lacamas Creek |
| Lacamas Creek Goodwin Road | LAC050 | Lacamas Creek |
| Matney Creek at NE 68th Street * | MAT008 | Lacamas Creek |
| China Ditch upstream of NE Ward Road | CHD012 | Lacamas Creek |
| Breeze Creek. below 4th Street * | BRZ008 | East Fork Lewis River |
| Gee Creek at Abrams Park * | GEE028 | Gee Creek |
| Whipple Creek at NW 179th Street * | WPL048 | Whipple Creek |
| Little Washougal at Blair Road | LWG013 | Little Washougal River |
| Jones Creek Camas Property * | JNS058 | Little Washougal River |
| Curtin Creek at NE 139th Street * | CUR022 | Salmon Creek |
| Mill Creek at Salmon Creek Avenue * | MIL008 | Salmon Creek |
| Cougar Creek at NW 119th Street * | CGR018 | Salmon Creek |
| Salmon Creek at Klineline Foot Bridge | SMN020 | Salmon Creek |
| Salmon Creek at NE 156th Street | SMN045 | Salmon Creek |

* indicates a Long Term Index Site

*Continuous Rainfall Gauges*

Continuous rainfall gauges provide an incremental record of rainfall with time. This information is used to analyze rainfall patterns and to develop computerized models needed for designing stormwater facilities and stormwater basin plans. Gauge sites are selected to provide good countywide rainfall information.

| Clark County Rain Gauge Site | Watershed |
|---|---|
| Goodwin Road | Lacamas Creek |
| Yacolt Town | East Fork Lewis River |
| Ridgefield Treatment Works | Gee Creek |
| Orchards at Whatley decant facility | Burnt Bridge Creek |
| Cape Horn School | Washougal River |
| Salmon Creek Treatment Works | Salmon Creek |
| Venersborg | Salmon Creek |
| Salmon Creek at 156th Street | Salmon Creek |

*Lacamas Lake Loading*

Water Resources completed a report (April 2004) describing the results of a five-year project to estimate nutrient loading to Lacamas Lake. The report and a focus sheet are available on the monitoring Web page.

*Lacamas Lake Loading Results:* Results show a significant decrease (approximately 50 percent) in phosphorus loading since the early 1980s. This reduction occurred between the early 1980's baseline study and when current data gathering began in fall 1998. However, the decreases in nutrient loading are not sufficient to cause a shift from eutrophic conditions, but may have slowed or temporarily halted the advance of eutrophication.

*Lacamas Lake Monitoring*

Water Resources performs monthly monitoring during May through October in Lacamas Lake to track lake health over time. Vertical profiles collect dissolved oxygen, temperature, pH, conductivity, and turbidity at 1-meter intervals. Secchi-disk readings are also recorded and water samples collected from several depths for nutrient analyses. In 2003, phytoplankton and chlorophyll a were added to the sampling.

*Lacamas Lake Monitoring Results:* Results showed a significant decrease in total phosphorus between the 1984 baseline assessment and data collected beginning in 1992. Since 1992, no trend is apparent, but algal data suggest that there is possible increased eutrophication. Lacamas Lake continues to be classified as eutrophic.

*Vancouver Lake Monitoring*

Water Resources supports a volunteer monitoring project on Vancouver Lake that began in summer of 2004. Vancouver Lake is a two-mile wide, shallow lake on the Columbia River flood plain. It is tidally influenced and connected to Lake River, Burnt Bridge Creek and indirectly to Salmon Creek through Lake River. The lake is monitored twice monthly for standard parameters and algal communities to make an assessment of current lake conditions.

*Vancouver Lake Monitoring Results:* Vancouver Lake has an overall trophic state index of 74, which places it in the hyper-eutrophic category. Lakes in this category generally have algal scums and low transparency that discourage boating and swimming. The lake has very low transparency; Secchi measurements are about half a foot or less, and turbidity readings are over 100 during late summer. Blue green algae monitoring by the Health Department resulted in swimming beach closures for much of summer 2004.

*Illicit Discharge Detection and Elimination*

During 2004, the program developed a plan to use a watershed based approach, including a stream assessment to map and inventory outfalls and find non-stormwater discharges. Whipple Creek watershed was selected for field work beginning in early 2005.

*Thomas Wetland Temperature Study*

Thomas Wetland is a newly built project that combines a wetland mitigation and stormwater control retrofit for a developed urban area. The wetland includes several acres of year-round open water that raised concerns about temperature. Temperature monitoring was performed on the facility and downstream pipe system to determine if the new wetland pond contributed to temperature problems in Burnt Bridge Creek.

*Thomas Wetland Temperature Study Results:* The open water at Thomas Wetland increased water temperatures over the preexisting ditch system. However, the water flowing out of Thomas wetland was cooled to subsurface soil temperatures (about 55 degrees Fahrenheit) during flow through more than a mile of piped storm sewer to the outfall into Burnt Bridge Creek.

*Long-Term Index Sites Project (LISP)*

Long-term Index Site Project monitoring began in August 2001. The LISP goal is to assess current conditions and trends in stream health at nine stormwater-influenced stream stations and a reference site. A suite of stream health characteristics are monitored at each site, including measures of physical habitat, biological condition, water quality, and hydrology. Characteristics and protocols are selected to produce data comparable to those collected by other agencies. Data are analyzed using standardized, regionally appropriate metrics to facilitate comparability.

*LISP Summary:* There are sufficient data to characterize site conditions. Longer periods of time, possibly five to ten years, may be required to discern trends.

| Site ID | Stream | Watershed | B-IBI Score Rating (2001-2004 Ave.) | Oregon DEQ Water Quality Index (2001-2004) |
|---|---|---|---|---|
| BRZ010 | Brezee Creek | East Fork Lewis River | 33 (Fair) | 74 (Poor) |
| RCN050 | Rock Creek North | East Fork Lewis River | 35 (Fair) | 79 (Poor) |
| CHL010 | Chelatchie Creek | Cedar Creek | 34 (Fair) | 89 (Good) |
| GEE050 | Gee Creek | Gee Creek | 21 (Poor) | 61 (Poor) |
| WPL050 | Whipple Creek | Whipple Creek | 25 (Poor) | 58 (Very Poor) |
| CGR020 | Cougar Creek | Salmon Creek | 21 (Poor) | 40 (Very Poor) |
| CUR020 | Curtin Creek | Salmon Creek | 21 (Poor) | 34 (Very Poor) |
| MIL010 | Mill Creek | Salmon Creek | 27 (Fair) | 74 (Poor) |
| MAT010 | Matney Creek | Lacamas Creek | 36 (Fair) | 87 (Good) |
| JNS060 | Jones Creek | Little Washougal River | 46 (Excellent) | 95 (Excellent) |

*Salmon Creek Monitoring Project*

The intent of the Salmon Creek Monitoring Project is to provide high-quality water quality information about the Salmon Creek watershed to Clark Public Utilities and Clark County decision-makers. In 2002, Water Resources and Clark Public Utilities agreed to consolidate ambient monitoring in Salmon Creek, standardize monitoring methods, and eliminate overlapping activities. As a result, Water Resources assumed responsibility for collecting water quality data at eight sites.

*Summary of Salmon Creek Site Results:* The table below shows data collected for five Clark Public Utilities sites. The LISP summary includes three other Salmon Creek Watershed Sites.

| Site | Location Stream | Oregon DEQ Water Quality Index Rating (2002-2004) |
|---|---|---|
| SMN010 | Salmon Creek @ NW 36th Avenue | 71 (Poor) |
| SMN030 | Salmon Creek above Mill Creek | 73 (Poor) |
| SMN050 | Salmon Creek @ NE 122nd Avenue | 84 (Fair) |
| WDN010 | Woodin Creek @ NE 122nd Avenue | 76 (Poor) |
| SMN080 | Salmon Creek @ NE 199th Street | 92 (Excellent) |

*Volunteer Stream Monitoring Project*

Volunteer-collected data from this project support the monitoring objectives of the Long-Term Index Site Project and the SWMP. Stream monitoring reaches are selected to provide data to the Water Resources' monitoring program and sites where volunteers can perform riparian restoration projects. Two volunteer sites, Mill Creek and Brezee Creek are part of the LISP project where volunteers collect quarterly water quality and annual macroinvertebrate samples to add to county data. Water Resources publishes newsletters (on volunteer the Web page) to update the monitors on the results from their projects.

*Summary of Volunteer Results:*

| Site | Stream | Watershed | B-IBI Score (Average) | Oregon DEQ Water Quality Index Rating |
|---|---|---|---|---|
| GEE030 | Gee Creek | Gee Creek | 24 (Poor) | 51 (Very Poor) |
| JEN010 | Jenny Creek * | East Fork Lewis River | 44 (Good) | 86 (Good) |
| FPL050 | Fifth Plain Creek * | Lacamas Creek | 23 (Poor) | 84 (Fair) |
| LWG015 | Little Washougal River* | Little Washougal River | 30 (Poor) | 88 (Good) |

*Gibbons Creek TMDL Volunteer Monitoring Project*

In April 2004, Clark County began a project to provide data describing bacteria, temperature, and turbidity for the Gibbons Creek bacteria TMDL program. The project was designed to target tributaries for further source identification projects and to provide a baseline for TMDL program effectiveness monitoring. Monitoring is conducted by county-trained volunteers and the lab analysis is provided by the City of Washougal sewer treatment works. Results of the first year of monitoring will be presented in the annual report for 2005.

*Watershed Characterization Grant*

During fall 2004, the Lower Columbia Fish Recovery Board completed a watershed characterization project for Cedar Creek, North Fork Lewis River below Lake Merwin and the East Fork Lewis River in WRIA 27, and Salmon Creek/Lake River and the Washougal River system in WRIA 28. The project was completed under contract with Clark County and Ecology Centennial Clean Water Grant G0300020. Reports describing stream surveys and riparian assessments are available on the Lower Columbia Fish Recovery Board Web page: http://www.lcfrb.gen.wa.us/document_library.htm. Water

Resources collected or coordinated 15 macroinvertebrate samples and 18 temperature data sites during the project.

*Watershed Characterization Grant results:* The project's temperature results are included with the 2004 temperature data. The table below summarizes the macroinvertebrate data and B-IBI scores.

*Summary of Characterization Grant 2004 B-IBI Results:*

| Site | Stream | Watershed | B-IBI Score |
|---|---|---|---|
| LOC020 | Lockwood Creek | East Fork Lewis River | 24 (Poor) |
| MLN010 | Mill Creek | East Fork Lewis River | 28 (Fair) |
| RCN010 | Rock Creek North | East Fork Lewis River | 32 (Fair) |
| RCS050 | Rock Creek South | East Fork Lewis River | 42 (Good) |
| CED080 | Cedar Creek | Cedar Creek | 48 (Excellent) |
| JON010 | John Creek | Cedar Creek | 44 (Good) |
| CHL030 | Chelatchie Creek | Cedar Creek | 26 (Poor) |
| WDN030 | Woodin Creek | Salmon Creek | 22 (Poor) |
| ROC010 | Rock Creek | Salmon Creek | 26 (Poor) |
| SMN085 | Salmon Creek | Salmon Creek | 38 (Good) |
| BDR030 | Boulder Creek | Little Washougal River | 34 (Fair) |
| LWG050 | Little Washougal River | Little Washougal River | 42 (Good) |

*Stream Health Report*

Water Resources published the Stream Health Report (June 2004), summarizing existing monthly water quality and annual macroinvertebrate data for Clark County streams. It provides observed stream health ratings where data exist or probable stream health ratings based on subwatershed land cover where water quality data are lacking. The report can be viewed at: http://www.clark.wa.gov/water-resources/stream.html, and a summary map was included in the 2003 annual report.

*Stream Temperature Monitoring*

For various projects, temperature loggers were placed at about 30 sites during 2004. Sites include the LISP sites, county volunteer sites, Watershed Characterization grant reaches, and volunteer projects using loaned county temperature loggers.

*2002 LISP Site temperature data logger results as numbers of days exceeding standard temperatures*

| Site Name | Stream | Watershed | Days > 64° F | Days > 70° F |
|---|---|---|---|---|
| CGR020 | Cougar Creek | Salmon Creek | 1 | 0 |
| CUR020 | Curtin Creek | Salmon Creek | 0 | 0 |
| MIL010 | Mill Creek | Salmon Creek | 23 | 0 |
| BRZ010 | Breeze Creek | East Fork Lewis River | 22 | 0 |
| RCN050 | Rock Creek North | East Fork Lewis River | 37 | 6 |
| CHL010 | Chelatchie Creek | Cedar Creek | 12 | 0 |
| JNS060 | Jones Creek | Little Washougal River | 0 | 0 |
| MAT050 | Matney Creek | Lacamas Creek | 39 | 4 |
| GEE050 | Gee Creek | Gee Creek | 56 | 9 |
| WPL050 | Whipple Creek | Whipple Creek | 23 | 0 |

*Summary of Salmon Creek Temperature Study Results:* Water Resources completed a report on Salmon Creek summer stream temperatures (September 2004) that defines the conditions in principal tributaries and the main channel in 2003. Results showed that most of the tributaries and the main channel failed to meet temperature criteria for significant periods of time.

*2003 Temperature data logger results as numbers of days exceeding standard temperatures*

| **Site Name** | **Stream** | **Watershed** | **Days > 64° F** | **Days > 70° F** |
|---|---|---|---|---|
| CGR020 | Cougar Creek | Salmon Creek | 0 | 0 |
| TEN010 | Tenny Creek | Salmon Creek | 0 | 0 |
| TEN050 | Tenny Creek | Salmon Creek | 0 | 0 |
| TEN055 | Tenny Creek | Salmon Creek | 0 | 0 |
| MIL010 | Mill Creek | Salmon Creek | 36 | 0 |
| CUR022 | Curtin Creek | Salmon Creek | 0 | 0 |
| MOR010 | Morgan Creek | Salmon Creek | 67 | 5 |
| SMN010 | Salmon Creek | Salmon Creek | 94 | 50 |
| SMN020 | Salmon Creek | Salmon Creek | 89 | 26 |
| SMN045 | Salmon Creek | Salmon Creek | 74 | 27 |
| SMN075 | Salmon Creek | Salmon Creek | 43 | 0 |
| ROC010 | Rock Creek | Salmon Creek | 64 | 6 |
| JEN019 | Jenny Creek | East Fork Lewis | 52 | 1 |
| BRZ010 | Brezee Creek | East Fork Lewis | 33 | 0 |
| RCN050 | Rock Creek North | East Fork Lewis | 40 | 1 |
| CHL010 | Chelatchie Creek | Cedar Creek | 24 | 0 |
| JNS060 | Jones Creek | Little Washougal River | 0 | 0 |
| LWG013 | Little Washougal River | Little Washougal River | 83 | 31 |
| LAC050 | Lacamas Creek | Lacamas Creek | 78 | 8 |
| LAC080 | Lacamas Creek | Lacamas Creek | 77 | 11 |
| MAT010 | Matney Creek | Lacamas Creek | 66 | 6 |
| FPL050 | Fifth Plain Ceek | Lacamas Creek | 87 | 28 |
| GEE050 | Gee Creek | Gee Creek | 65 | 4 |
| WPL050 | Whipple Creek | Whipple Creek | 47 | 0 |

*2004 Temperature data logger results as numbers of days exceeding standard temperatures*

| Site Name | Stream | Watershed | Days > 64° F | Days > 70° F |
|---|---|---|---|---|
| CGR020 | Cougar Creek | Salmon Creek | 3 | 0 |
| MIL010 | Mill Creek | Salmon Creek | 57 | 1 |
| WDN010 | Woodin Creek | Salmon Creek | 78 | 49 |
| ROC010 | Rock Creek | Salmon Creek | 25 | 6 |
| MAC050 | McCormick Creek | East Fork Lewis | 70 | 14 |
| BRZ010 | Brezee Creek | East Fork Lewis | 58 | 2 |
| MLN010 | Mill Creek North | East Fork Lewis | 0 | 0 |
| MAS050 | Mason Creek | East Fork Lewis | 68 | 15 |
| RCN010 | Rock Creek North | East Fork Lewis | 67 | 31 |
| RCN050 | Rock Creek North | East Fork Lewis | 60 | 8 |
| CHL010 | Chelatchie Creek | Cedar Creek | 22 | 0 |
| CHL050 | Chelatchie Creek | Cedar Creek | 0 | 0 |
| CED050 | Cedar Creek | Cedar Creek | 57 | 32 |
| CED055 | Cedar Creek | Cedar Creek | 55 | 29 |
| CED070 | Cedar Creek | Cedar Creek | 36 | 0 |
| CED080 | Cedar Creek | Cedar Creek | 38 | 1 |
| JNS060 | Jones Creek | Little Washougal River | 0 | 0 |
| LWG013 | Little Washougal River | Little Washougal River | 54 | 28 |
| LWG040 | Little Washougal River | Little Washougal River | 42 | 6 |
| LWG050 | Little Washougal River | Little Washougal River | 37 | 0 |
| LWG080 | Little Washougal River | Little Washougal River | 20 | 0 |
| WAS020 | Washougal River | Washougal River | 59 | 40 |
| MAT010 | Matney Creek | Lacamas Creek | 59 | 22 |
| FPL050 | Fifth Plain Ceek | Lacamas Creek | 85 | 52 |
| GEE050 | Gee Creek | Gee Creek | 68 | 4 |
| WPL050 | Whipple Creek | Whipple Creek | 61 | 2 |
| GIB010 | Gibbons Creek Mouth | Gibbons Creek | 87 | 53 |
| GIB030 | Gibbons Creek | Gibbons Creek | 51 | 2 |
| GIB042 | Gibbons Creek | Gibbons Creek | 13 | 0 |
| GIB044 | Gibbons Creek | Gibbons Creek | 28 | 0 |
| GIB045 | Gibbons Creek | Gibbons Creek | 39 | 0 |
| CMP010 | Campen Creek | Gibbons Creek | 66 | 2 |

*ESA Program Environmental Template Project*

During late 2001, the Clark County ESA Program began a project to characterize an environmental baseline for stream conditions in Clark County watersheds. During 2004, the watershed template conceptual model for terrestrial systems was completed.

### S5.B.5. Fiscal Analysis

Permit Requirement

*A fiscal analysis, covering the term of the permit, of the capital, and operation and maintenance expenditures necessary to implement the stormwater management program, and a description of staff, equipment, and support capabilities to implement the stormwater management program. The fiscal analysis shall include a description of the source of funds that are available or are proposed to meet the necessary expenditures.*

Summary of Compliance Activities

The fiscal analysis requirement applies to submittal of the stormwater management program in the 1998 NPDES Part 2 application (revised in 1999). Each program element in the SWMP and the Special Condition S9 included a description of the estimated annual budget for each current and proposed new activity. Funding sources were specified for current activities. A new stormwater fee, termed the Clean Water Program Fee was established to fund new activities.

Part 3 of this report, "Differences between planned and actual expenditures by component" provides detail about estimated and actual budgets and total expenditures.

The county uses financial tracking systems to account for stormwater fee revenue expenditures by permit component for most new activities funded by stormwater fee revenue. However, some ongoing pre-permit activities are almost impossible to track by component because they are not billed to a unique expense code that can be matched to the permit component.

*Revenue Sources for Ongoing Pre-Permit Activities*

Development fees, the General Fund, the Solid Waste Program Fund, and the Road Fund are generally the revenue source for ongoing pre-permit activities.

*Clean Water Program Fund for New Activities*

Clark County established a stormwater fee (Clean Water fee) to pay for increased stormwater management under the permit (the permit condition S9 activities). The fee was approved in October 1999 and the first annual billing was mailed on June 20, 2000. All Clean Water fee and water quality grant revenue is placed in a special fund called the Clean Water Program Fund. Stormwater program expenses are coded and tracked so that they can be matched to specific projects or program activities, program elements such as monitoring or administration, and the most applicable permit component.

**S5.B.6. Data Maintenance**

Permit Requirement

*A mechanism for gathering, maintaining, and using adequate information to conduct planning, priority setting, and program evaluation activities. The information and its form of retention shall include but not be limited to:*

1. *Mapping of known municipal separate storm sewer outfalls;*
2. *Mapping of tributary conveyances, and the associated drainage areas of major municipal separate storm sewer outfalls;*
3. *Maps depicting existing land use;*
4. *A Map depicting zoning; and*
5. *A data base, including at least the following information: precipitation records; stormwater quality and quantity records; water quality and physical characteristics of receiving water that may be impacted by stormwater; and a description and*

*location of major structural BMPs and other structural controls for stormwater discharges.*

Summary of Compliance Activities

The Department of Assessment and GIS collects and maintains the largest amount of county GIS information. Public Works Water Resources Program maps storm sewer infrastructure and maintains GIS data for the storm sewer system and specific stormwater management information such as watershed boundaries, detailed stream mapping, and GIS information associated with monitoring projects. The Water Resources Program maintains stormwater program monitoring data.

*Urban Storm Sewer Systems*

Urban storm sewer system mapping consists of creating an inventory and GIS map of storm sewer systems in urban areas of unincorporated Clark County. The overall goal is to use the best available information to complete the storm sewer GIS inventory and mapping. During 2004, work focused on auditing engineering plans for subdivisions and road projects to find the best available plans to improve the completeness and accuracy of the GIS data. As new developments are completed, the storm sewer information is entered into the GIS within two weeks of receipt of the as-built plan sets.

*Public Stormwater Facilities Inventory and Mapping*

During 2004, work continued on mapping and describing public stormwater facilities. Public Works maintains GIS information describing facility type, design and flow criteria, and catchment area treated by the facility. During 2004, the public facilities database was expanded to include 595 facilities at 473 site locations. Design criteria for flow and quality were recorded for 196 of these sites.

*Private Facilities Inventory and Mapping*

During 2004, mapping work from engineering plans continued to add private stormwater facilities to the GIS storm sewer database. The total number of private facilities was increased to 806 sites.

*Rural Roadside Ditches*

Rural drainage system mapping consists of inventorying and mapping roadside ditches along county right-of-way in areas lacking storm pipe systems. During 2004, a project was initiated to refine the ditch information in order to show side-of-street and driveway culvert data. This project will be on-going in 2005. Currently there are about 5000 ditch segments in the GIS database.

*Development Project Record Drawings and Plan Sheets*

The Department of Assessment and GIS continued to scan and index record drawings and preliminary plan sheets for historic projects lacking record drawings. The total numbers of plan sheets in the system are:

- 5,515 Subdivision and Short Plat Record Drawings
- 2,734 Site Plan Record Drawings
- 8,176 Preliminary Subdivision and Short Plat Plans

- 771 Preliminary Site Plans

All of the scanned documents are indexed and linked to internet-based maps. These maps are available for public viewing on the county Web page and were used by Public Works to verify storm sewer and facility mapping in the GIS database.

*GIS Land Use and Water Resource Data*

The Department of Assessment and GIS has a library that includes land use descriptions, zoning classifications, basin boundaries, water bodies, and other information useful for stormwater management. Some of this information may be viewed through the county Web site. GIS data other than storm sewer systems that are maintained and updated periodically by the GIS Department or Public Works include:

- Parcel boundaries and attributes, including land use and zoning
- Administrative boundaries
- Urban growth boundary
- Comprehensive land use plan for GMA
- Zoning
- Easements
- Subdivision boundaries
- Public and private roads
- Orthophotographic images of the entire county
- LiDAR tree canopy
- LiDAR buildings
- Detailed land cover derived from infrared images and LiDAR
- LiDAR derived stream centerlines and open water bodies
- 2-foot topography for urban and rural areas
- 4-foot topography in predominately forest areas
- Stormwater Fee Parcels
- Commercial, industrial, public facility, and road impervious area measurements
- Public Works sample points
- Watershed and subwatershed boundaries

GIS data at the GIS Department or Public Works Department that may or may not be periodically updated:

- Land cover from a July 2000 Landsat image
- Sanitary sewer lines
- Land use
- DNR/SSHIAP water bodies
- Wetlands
- Conservation easements
- State and federally owned lands

*Regional Wetland Inventory*

In 2004, the county GIS department, Ecology staff, and consultants created a draft wetland predictive model using LiDAR topography, land cover, and other GIS data. The model was designed to attempt to map wetlands by hydrogeomorphic class but success was mixed. The project also inventoried approximately 175 sites predicted as wetlands by the model.

*Stormwater Fee Database*

In 2000, Clark County created a county-wide storm sewer fee database which includes every tax lot in unincorporated Clark County that has assessed improvements valued at $10,000 or more. It also includes the amount of impervious area for each non-residential lot (businesses, industries, public facilities, county roads, state highways, and government facilities).

*Centralized Water Quality and Quantity Database*

Water Resources developed a Microsoft SQL database to store water quality, biological, hydrological, and physical habitat data on the Water Resource Program server. The submittal guidelines of Ecology's Environmental Information Management System (EIMS) were used as a data standard. Data input forms were created and Water Resources began entering project data into the Water Resources Database. The monitoring sites in the database are linked to GIS locations.

A separate volunteer monitoring database is established for the Clark County Volunteer Monitoring Program data that does not fit the Water Resources Database. The volunteer database is a Microsoft Access database that allows the storage of habitat survey data, volunteer information, and equipment lending through the monitoring resource center. The database follows the same standard as the central Water Resources database.

*Private Facilities Maintenance and Source Control BMP Database*

Water Resources maintained a Microsoft Access database for recording and reporting private storm sewer maintenance inspections and source control BMP implementation.

*ArcHydro Mapping of Whipple Creek Watershed*

Water Resources continued to implement the ESRI GIS ArcHydro data model for displaying and modeling environmental data. In 2004, Whipple Creek watershed was mapped in ArcHydro using LiDAR topography and orthophotography. The program mapped approximately 100 reaches and associated catchments for the 12 square mile watershed.

**S5.B.7. Watershed-wide Coordination**

Permit Requirement

*Consider opportunities for watershed-wide coordination mechanisms to address the following during the term of the permit:*

1. *Development of coordinated stormwater management programs for shared water bodies;*

2. *Coordination of data management and mapping activities for compatibility; and*
3. *Coordination of monitoring and modeling activities to develop comparable data sets among permittees when estimating pollutant concentrations and loads, evaluating impacts, and addressing controls.*

Summary of Compliance Actions

Clark County endeavors to coordinate with local municipalities and agencies that play a role in water resource or stormwater management. Examples from 2004 include:

- Took a lead role in forming the Vancouver Lake Watershed Partnership
- Active member of the Lower Columbia Fish Recovery Board
- Active member in the WRIA 27/28 Planning Unit
- Coordination of monitoring for TMDL programs in Gibbons Creek watershed
- Coordination with Ecology for Salmon Creek Bacteria TMDL
- Active participation by the ESA coordinator on the Board of Directors for Clark County Habitat Partners, a public-private organization promoting habitat preservation and restoration
- Holding monthly Clean Water Commission meetings on stormwater issues
- Periodic meetings with the City of Vancouver and other Clark County municipal stormwater programs
- Promoting standardized monitoring parameters and standard procedures for data gathering in Clark County
- Implementing an intergovernmental agreement with Clark Public Utilities for Salmon Creek watershed data gathering
- Technical assistance and coordination with Clark Public Utilities' monitoring program in Cedar Creek and East Fork Lewis River
- Informal agreements with Yacolt and Ridgefield for placing rain gauges and stream gauges on city property
- Implementing an intergovernmental agreement with the Lower Columbia Fish Recovery Board to identify priority salmon restoration and preservation streams and conduct field work to characterize their condition
- Maintaining a centralized, county-wide GIS system for local storm drainage mapping (currently Clark County and the City of Camas use the system)
- Operation of Public Works' street waste decant facility which is utilized by Vancouver, Camas, Woodland, and WSDOT, and is available to other Clark County municipalities
- Coordinated planning with WSDOT for stormwater retrofit capital improvement projects
- Participating in the Regional Coalition for Clean Rivers and Streams which includes Clark County, Vancouver, and jurisdictions throughout the Portland, Oregon metropolitan area
- Funding the cooperative Watershed Stewards and Living on the Land education program at WSU Extension

## S5.B.8.a. New Development, Redevelopment and Construction Site Runoff

Permit Requirement

*A program to control runoff from new development, redevelopment and construction sites that discharge to the municipal separate storm sewers owned or operated by the permittee. The program must include: ordinances, minimum requirements, and best management practices (BMPs) equivalent to those found in Volumes I through IV of Ecology's Stormwater Management Manual for the Puget Sound Basin (1992 edition), permits, inspections, and enforcement capability. The program must also include a process to make available copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment.*

Summary of Compliance Activities

Clark County development regulations apply to project sites that discharge to county storm sewers or waters of the state. Clark County Community Development Department implements the following development regulations to control stormwater's adverse influence on streams, wetlands, lakes, groundwater, and wildlife habitat:

- Stormwater and Erosion Control Ordinance
- Wetlands Protection Ordinance
- Habitat Preservation Ordinance
- Critical Aquifer Recharge Areas Ordinance

Clark County Public Works Department issues and enforces permits for utility construction in county right-of-way. These projects are also subject to the Stormwater and Erosion Control Ordinance.

*Equivalence to the Stormwater Management Manual for the Puget Sound Basin (Washington Department of Ecology, Feb. 1992)*

The county stormwater and erosion control code was revised for equivalence to the state manual and adopted by the Clark County Board of County Commissioners in July 2000. In April 2001, Ecology formally acknowledged that Clark County code meets the permit equivalency requirement. In November 2003, Chapter 13.29 Clark County Code was combined with other development regulations to create the new Title 40 Unified Development Code. The code revision was performed to simplify and better organize development regulations and is policy neutral. No revisions influenced stormwater and erosion control code equivalence to the 1992 Ecology stormwater manual. Stormwater and erosion control are now covered under Chapter 40.380 CCC.

*Erosion Control Certification*

Beginning January 1, 2001, County code requires all development contractors to be trained and certified in erosion and sediment control by an organization recognized by the Community Development Department Director. The program has certified 923 people in Clark County as of early 2005.

*Regulatory Program Compliance Measures*

Stormwater and erosion control engineering design plans are only approved after detailed engineering review for conformance to stormwater code. Building permits are not issued until the subdivision stormwater system is complete. A low number of Development Services project inspections noted erosion control certifications because certifications were verified before the projects begin construction and then rarely noted in follow-up field inspections.

*2004 Stormwater and Erosion Control Engineering Plan Review*

| Plans Submitted | Number with Stormwater Features | Plans Approved | Stormwater Features in Compliance |
|---|---|---|---|
| 175 | 175 | 118 | 175 |

*2004 Development Services Inspections*

| Reporting Item | Totals |
|---|---|
| # of active construction projects | 323 |
| # projects with initial inspection for buffer stakes and sediment control | 15 |
| # projects with monthly erosion control log | 63 |
| # erosion control inspections | 1834 |
| # projects with erosion control certification | 138 |
| # stop work orders for erosion control violations | 1 |
| # citations for erosion control violations | 6 |
| # stormwater control inspections | 1336 |
| # stop work orders for storm control violations | 9 |
| # citations for storm control violations | 0 |
| # construction acceptances | 87 |
| # maintenance warranty inspections | 41 |
| # projects receiving maintenance warranty inspection at 22 months (for county ownership) | 41 |
| Percent projects receiving maintenance warranty inspection at 22 months (for county ownership) | 100% |
| # warranty inspections where notice of deficiencies sent out | 10 |
| Percent warranty inspections where notice of deficiencies sent out | 24% |
| # final warranty release | 38 |

*2004 Building Division Erosion Control Compliance Measures*

| Quarter | Inspections | Correction Orders | Stop Work Orders | Citations |
|---|---|---|---|---|
| Jan.- March | 1086 | 73 | 2 | 0 |
| Apr. - June | 2309 | 199 | 5 | 0 |
| July – Sept. | 2276 | 206 | 2 | 0 |
| Oct. – Dec. | 2370 | 251 | 1 | 0 |
| **Totals** | **8041** | **729** | **10** | **0** |

*Public Works Utility Permit Inspections*

All public utilities permit work in right-of-way is required to have a utility permit and follow the design specifications. These projects are also subject to erosion control requirements of Chapter 40.380 CCC, Stormwater and Erosion Control. Generally, statistics for the reporting period suggest each permitted activity received an average of about three inspections. Generally, there are few stop work orders because education actions solved problems. Two projects found working without permits voluntarily stopped work.

*2004 Utility Inspection Compliance Measures*

| Permits Issued | Inspections | Stop Work Orders | Projects Lacking Permit | Erosion Control Violations | Erosion Control Education Actions |
|---|---|---|---|---|---|
| 1139 | 3075 | 0 | 2 | 0 | 35 |

*Public Works Road Program Plan Review*

During 2004, all Public Works Department project design plans were submitted to Community Development for review and approval. The process is identical to private development projects.

*Public Works Road Program Construction Compliance*

County road project contractors are required to conform to local and state codes and laws by contract. This includes construction of stormwater facilities and erosion control measures. At least one construction management staff person is assigned to each project to review these measures. A Public Works site inspector visits the site each day to ensure compliance, identify potential problems before they become issues, and recommend field changes, as necessary.

The standard construction contract includes individual bid items for erosion and sediment control, and stormwater pollution prevention BMPs. There are also bid items and payment schedules for individual water quality items, such as a construction entrance and wash rack, or an erosion control blanket.

*2004 Code Enforcement Division Compliance Measures*

Code Enforcement Division enforces building, development, and environmental regulations. Two Code Enforcement Officers work full time on erosion control, the Water Quality Ordinance, and other environmental regulations.

*2004 Code Enforcement Division Inspections and Violations*

| Type of Inspection | Grading | Erosion | Water Quality | Stormwater | Wetland/ Habitat | Other | TOTAL |
|---|---|---|---|---|---|---|---|
| Complaints | 105 | 172 | 5 | 60 | 165 | 5 | 512 |
| Proactive Inspection | 0 | 292 | 0 | 61 | 1 | 1 | 355 |
| Subdivision Monitor | 14 | 477 | 0 | 72 | 1 | 1 | 565 |
| Public Relations | 2 | 3 | 2 | 7 | 5 | 0 | 19 |
| **TOTAL** | **121** | **944** | **7** | **200** | **172** | **7** | **1451** |

| | Grading | Erosion | Water Quality | Stormwater | Wetland/ Habitat | Other | TOTAL |
|---|---|---|---|---|---|---|---|
| **Violations** | **55** | **249** | **4** | **32** | **53** | | **393** |

*2004 Code Enforcement Resolutions*

| Type of Resolution | Grading | Erosion | Water Quality | Stormwater | Wetland/ Habitat | Other | TOTAL |
|---|---|---|---|---|---|---|---|
| Correction Notice | 2 | 96 | 1 | 0 | 1 | 0 | 100 |
| Letter | 34 | 9 | 0 | 53 | 32 | 2 | 130 |
| Personal Contact | 98 | 417 | 6 | 69 | 143 | 7 | 740 |
| Education | 76 | 241 | 46 | 48 | 161 | 1 | 573 |
| Citation | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Notice and Order | 5 | 2 | 0 | 1 | 0 | 0 | 8 |
| Stop Work Order | 11 | 14 | 0 | 1 | 3 | 1 | 30 |
| Hearing | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| Referral to Water Resources | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | **227** | **783** | **53** | **172** | **340** | **11** | **1586** |

*Notice of Intent Forms*

Development and redevelopment projects subject to NPDES industrial construction permits and industrial stormwater permits typically trigger stormwater and erosion control requirements under Chapter 40.380 CCC. Community Development engineering staff's project review identifies the state and local permits that each project would require, including state stormwater permits. Applicants that appear to require an industrial NPDES stormwater permit are referred to the Department of Ecology Web page for the current application forms.

*Regulatory Program Monitoring*

Community Development uses a set of criteria to monitor implementation of the Stormwater and Erosion Control Ordinance. These are included as reporting items in this permit component.

**S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting)**

Permit Requirement

*Appropriate treatment and source control measures to reduce pollutants in runoff from existing commercial and residential areas that discharge to municipal separate storm sewers owned or operated by the permittee.*

Summary of Compliance Activities

Ecology further defines this requirement in condition S9.E., as a stormwater capital program to plan and build stormwater facilities to retrofit existing development. During 2004, the county stormwater management program continued the process to identify, prioritize, and build stormwater retrofit projects. Additionally, stormwater retrofit facilities were designed and built as a part of the County Road Capital Improvement Program.

*Stormwater Program Capital Improvement Activities*

The stormwater program's capital activities in 2004 focused on designing and building projects that were planned during 2003. Some additional work was performed on projects built in 2003, such as planting maintenance. The stormwater program is also partnering with the Road Program to plan and build regional facilities in the urbanizing Curtin Creek and Mill Creek subwatersheds of Salmon Creek watershed. Also, plans were laid to begin a project in January 2005 to identify and prioritize stormwater projects for Whipple Creek Watershed.

*Clean Water Fund Stormwater Projects completed, under construction or planned during 2004*

| Project # | Name | Description | Treatment Standard and treated impervious area | Flow Control Standard and impervious area treated | Status |
|---|---|---|---|---|---|
| 400279 | Suds Creek Stormwater Facility | Retrofit an existing stormwater facility to increase detention stormwater treatment. | Optimize existing facility | 2 year peak flows are reduced from 13 cfs to 9 cfs | Completed |
| 400280 | Bliss Road @ NW 36th Ave. | This project retrofits an older stormwater facility to increase treatment and detention capacity for stormwater draining to lower Salmon Creek. | Optimize existing facility | Only to optimize facility | Completed |
| 400291 | Gabbert Stormwater Facility | The project will provide increased detention and treatment for existing roadside ditches in Mill Creek headwaters. | 70% of the 2 yr 24 hour storm | Approximately 10 acre feet of detention storage | Design 50% complete |
| 400281 | Salmon Creek / Hwy 99 North Storm Water Facility | Retrofits an existing stormwater system to add water quality treatment. Drainage area includes Highway 99 and drains south into Salmon Creek. The project will also reconfigure several stormwater outfalls to Salmon Creek. | 40% of the 2yr 24 hr storm for 24 acres | | Design Complete |

*Road Project Retrofits*

Public Works road improvement and widening projects include stormwater controls that retrofit existing drainage systems under two main circumstances:

- The replacement of existing roadway that lacks stormwater treatment and flow controls
- The addition of treatment and flow control capacity for existing county stormwater systems that drain into a road project site

The policies that drive road project retrofits are compliance with county stormwater code requirements to add stormwater controls for "redeveloped" roads and compliance with ESA requirements. In some cases, Public Works road projects will add stormwater treatment and flow control capacity for existing drainage routed into the project area.

Retrofits mainly occur as part of road widening projects where an existing road lacks stormwater treatment and flow controls. Typically, about half of the stormwater facilities on road projects are built to retrofit existing right-of-way to current stormwater standards. The following table is a cost estimate for road projects that include stormwater treatment and flow control retrofitting for projects that incurred more than $1,000 expenses in 2004. The 1999 stormwater management program did not include this type of stormwater capital project.

*Road Program Stormwater Retrofits*

| WO # | Project | 2004 Total Costs | Estimated Construction Cost | Stormwater Mitigation Portion | Stormwater Controls as % of Construction | New Impervious Area Treated (ac.) | Retrofit (Existing) Impervious Area Treated (ac.) | Total Impervious Area Treated (ac.) | Ratio Existing Impervious/ Total Impervious | Stormwater Retrofit Costs |
|---|---|---|---|---|---|---|---|---|---|---|
| 301422 | NE St Johns Rd | $655,075 | $11,602,272 | $3,716,938 | 32.04% | 11.07 | 11.67 | 22.74 | 0.51 | $107,699 |
| 310122 | NE 72nd Avenue | $232,799 | $6,518,462 | $2,203,222 | 33.80% | 2.94 | 3.1 | 6.04 | 0.51 | $40,385 |
| 311022 | NE 76th Street | $3,711,143 | $4,402,000 | $1,000,000 | 22.72% | 2.12 | 8.22 | 10.34 | 0.79 | $670,207 |
| 311522 | NE 10th Ave Ph II | $2,344,880 | $2,402,347 | $400,000 | 16.65% | 1.1 | 3.5 | 4.6 | 0.76 | $297,068 |
| 320222 | NW 179th St | $35,105 | $3,475,000 | $882,000 | 25.38% | | | 5.79 | 0.75 | $6,683 |
| 320322 | NE 117th St | $307,943 | $3,463,000 | $700,000 | 20.21% | | | | 0.75 | $46,685 |
| 320922 | NE 76th Street | $1,411,017 | $1,091,042 | $275,000 | 25.21% | | | | 0.79 | $280,964 |
| 321022 | NE 88th St | $207,400 | $4,000,000 | $1,000,000 | 25.00% | | | | 0.40 | $20,740 |
| 321122 | NE 137th Ave | $86,858 | $564,000 | $85,000 | 15.07% | | | 1.6 | 0.40 | $5,236 |
| 321222 | Betts Br #26 | $494,579 | $2,400,000 | $409,000 | 17.04% | 0.58 | 1.86 | 2.44 | 0.76 | $64,250 |
| 330222 | NE 88th St | $425,638 | $7,500,000 | | 25.00% | | | | 0.40 | $42,564 |
| 330322 | I-5/Salmon Cr Improvements | $121,367 | $26,000,000 | | 25.00% | | | | 0.40 | $12,137 |
| 330422 | NE 63rd St | $502,418 | $3,600,000 | $630,000 | 17.50% | 3.8 | 7.9 | 11.7 | 0.68 | $59,367 |
| 330522 | NE 99th St | $50,713 | $2,732,000 | $671,800 | 24.59% | | | | 0.40 | $4,988 |
| 330722 | NE Heisson Rd | $78,664 | $425,000 | $35,000 | 8.24% | | | | 0.30 | $1,943 |
| 331822 | NE 172nd Ave | $56,206 | $505,000 | $185,000 | 36.63% | 0.51 | 1.36 | 1.87 | 0.73 | $14,975 |
| 350422 | NE Ward Rd/NE 172nd Ave | $87,889 | $7,400,000 | $3,000,000 | 40.54% | | | | 0.50 | $17,815 |
| 381022 | NW 117th/119th | $490,113 | $4,900,000 | $1,007,000 | 20.55% | 10.77 | 6.32 | 17.09 | 0.37 | $37,248 |
| 381122 | NE 179th St | $194,813 | $15,629,000 | $4,000,000 | 25.59% | | | | 0.29 | $14,459 |
| 382822 | NE 15th Ave | $22,786 | $3,800,000 | | 25.00% | 7.32 | 0.29 | 7.61 | 0.04 | $217 |
| 392922 | NE Hwy 99 | $7,795,906 | $9,000,000 | $2,000,000 | 22.22% | 4.4 | 6 | 10.4 | 0.58 | $999,475 |
| 393722 | NE 162nd Ave | $6,265,769 | $8,334,000 | $1,700,000 | 20.40% | 9 | 15 | 24 | 0.63 | $798,822 |
| 301022 | NE Covington Rd | $47,320 | $2,260,000 | | 15.00% | 2.7 | 2.4 | 5.1 | 0.47 | $3,340 |
| 331922 | NE Padden Parkway | $253,397 | $7,732,000 | $2,500,000 | 32.33% | | | | 0.20 | $16,386 |
| 341622 | NE 117th/119th St | $214,865 | $5,450,000 | | 40.00% | | | | 0.40 | $34,378 |
| 360822 | NE Covington Rd | $57,253 | $2,892,000 | | 15.00% | | | | 0.40 | $3,435 |
| 380122 | NE 199th St | $222,045 | $4,704,000 | $1,583,490 | 33.66% | 4.4 | 6 | 10.4 | 0.58 | $43,123 |
| 381422 | NE 134th St | $63,082 | $2,450,000 | | 25.00% | 2.7 | 4.5 | 7.2 | 0.63 | $9,857 |
| 392722 | NE Padden Parkway | $27,734 | $6,500,000 | | 30.00% | | | | 0.40 | $3,328 |
| 312122 | NE Hazel Dell Ave | $20,632 | $3,900,000 | | 25.00% | | | | 0.40 | $2,063 |
| 360322 | NE 10th Ave Ph 1 | $36,137 | | | 25.00% | | | | 0.40 | $3,614 |
| 382922 | Padden Parkway | $55,816 | | | 15.00% | | | | 0.10 | $837 |
| 340622 | NE 119th St | $41,711 | | | 30.00% | | | | 0.40 | $5,005 |
| 340722 | NE 119th St | $23,474 | | | 40.00% | | | | 0.40 | $3,756 |
| | | | | | | | | | **48.56%** | **$3,673,049** |

## S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers

Permit Requirement

*Operation and maintenance programs for new and existing stormwater facilities owned or operated by the permittee, and an ordinance requiring and establishing responsibility for operation and maintenance of other stormwater facilities that discharge into municipal separate storm sewers owned or operated by the permittee. The programs shall include a strategy for addressing the disposal of street waste, decant, and cooperative efforts with Ecology and other entities to develop decant solutions.*

Summary of Compliance Activities

Public Works Operations Division maintains all county-owned storm sewers and roadside ditches. Private facilities and storm sewer systems are maintained by the owner or operator. The Stormwater Facility Maintenance Manual adopted by reference under Chapter 13.26A CCC has standards and practices for maintaining both public and private storm sewer systems. The county owns and operates a road waste decant facility which also serves other governments' maintenance programs.

*County Storm Sewer Maintenance*

During 2004, Clark County operated and maintained storm sewers according to schedules and standards established for the approved NPDES stormwater management program. The Stormwater Facility Maintenance Manual includes source control, erosion control, and vegetation management standards and practices which apply to all private and public stormwater facilities. In addition, the Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes source control, erosion control, and vegetation management standards and practices for activities that maintain roads, stormwater facilities, public facilities, and park lands.

*Regional Road Maintenance ESA Program*

In 2004, Clark County became a member of the Regional Road Maintenance ESA Program and began implementing the program. The program also applies to the O and M of stormwater infrastructure associated with streets and roads. The program seeks to protect salmon by implementing a program of BMPs for road and storm sewer maintenance.

*Stormwater Treatment Facility Condition Inventory*

In 2003, Public Works performed a complete inventory and performance inspection on 478 public storm water facilities to fully implement facility maintenance requirements under Chapter 13.26A CCC Water Quality. About five percent of the sites were found to be in a failure condition for various reasons. Many of the failing facilities were designed and built before stormwater control standards were established in the mid 1990s. Systematically repairing these facilities has led to the initiation of a Small Facility Retrofit Program to upgrade the design of the failing facilities to meet or exceed existing water quality standards.

In 2004, 41 newly added publicly owned facilities were inspected and graded. All have met or exceeded performance requirements.

*2004 Stormwater Facility Maintenance Compliance Measures*

| Facility/Activity | NPDES-Required Activity | Performance Measures | Number of Activity |
|---|---|---|---|
| Catch basins | Inspect 1x/yr clean following maintenance standards | # catchbasins owned by CC<br># catchbasins inspected<br># catchbasins cleaned<br>percent catchbasins cleaned | Approx. 7,500<br>all inspected<br>8,452 cleaned<br>100 % cleaned |
| Manholes | Inspect 1 x/yr clean following maintenance standards | # manholes owned<br># manholes inspected<br># manholes cleaned<br>percent cleaned | Approx. 2400<br>all inspected<br>16 cleaned<br><1 % |
| Drywells | Inspect /clean every 3-5 years | # drywells owned<br># drywells inspected<br># drywells cleaned<br>percent cleaned | Approx. 900<br>all inspected<br>19 cleaned<br>2 % |
| Detention/Retention facilities | Mow 3 or 4 x/yr or maintain vegetation as natural | # R/D facilities owned<br># mowings<br># other maintenance done<br>percent compliance | 197<br>892<br>all weeded<br>100 % |
| Biofiltration swales | Mow 3 or 4 x/yr other activities as per manual | # swales owned<br># times swales mowed<br>description of other activity<br>percent compliance | 386<br>5 times each<br>cleaned/weeded<br>100 % |
| Spill response-stormwater facilities | Procedures in place | # of kits in vehicles<br># of vehicles<br>percent of vehicles w/spill kits<br># of spills reported to Ecology | 159<br>159<br>100 %<br>0 |
| Storm sewer pipe | Inspect/maintain as necessary | # feet cleaned | 9,167 |
| Roadside ditches/culverts | Preventative Maintenance on all | # ditches inspected<br># ditches cleaned<br># culverts inspected<br># culverts cleaned | all inspected<br>8 %<br>all inspected<br>8 % |
| Maintenance tracking | Use computer based system to track activities | Activity Tracking Database still in use | |

*Maintenance Tracking System*

The county currently uses a Microsoft Access® database to track maintenance activities for the permit.

*Private Stormwater Systems Inspection*

Public Works has an inspector who checks private storm sewer facilities for compliance with maintenance standards.

Public Works stormwater education staff inspects sites that are more likely to require source controls and provides source control technical assistance.

*2004 Compliance Measures for Private Storm Sewer Maintenance and Source Controls*

| Number | Reporting Item |
|---|---|
| 1128 | Private stormwater systems had **maintenance** inspections |
| 870 | Private stormwater systems meeting **maintenance** requirements |
| 164 | Private stormwater systems not meeting **maintenance** requirements |
| 172 | Private stormwater systems referred/provided **maintenance** info/education |
| 2 | Private stormwater systems referred to Code Enforcement for **maintenance** |
| 85 | Private stormwater systems had **source control** inspections |
| 40 | Private stormwater systems meeting **source control** requirements |
| 45 | Private stormwater systems not meeting **source control** requirements |
| 85 | Private stormwater systems referred/provided **source control** info/education |
| 3 | Private stormwater systems referred to Code Enforcement for **source control** |

*Decant Facility Operation*

Clark County operates a storm sewer sludge decant facility to manage materials pumped from catch basins, drywells, and other storm sewer components. Liquids are treated and discharged to small, clay-lined retention ponds, which can be emptied to the sanitary sewer. Solids are managed and disposed of, or reclaimed under a solid-waste handling permit issued by the Clark County Health Department. WSDOT, and the Cities of Vancouver, Camas, and Battle Ground, also use the facility. Other Clark County municipalities have the option of contracting to use the facility.

**S5.B.8.d. Operation and Maintenance of Roads and Highways**

Permit Requirement

*Practices for operating and maintaining public streets, roads and highways, including rest areas, to reduce stormwater runoff impacts.*

Summary of Compliance Activities

Clark County maintained roads and streets according to schedules and standards established for the approved NPDES stormwater management program. Public Works Operations Division and Parks Maintenance follow standards and practices in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. The manual was adopted as county policy in July 2000 for the use of pesticides and fertilizer on county lands and by Public Works for road maintenance activities.

*Regional Road Maintenance ESA Program*

In 2004, Clark County became a member of the Regional Road Maintenance ESA Program and began implementing the program. The program also applies to the O and M streets and roads. The program seeks to protect salmon by implementing a program of BMPs for road and storm sewer maintenance.

*Critical Areas Atlases*

Clark County critical areas such as stream buffers and wetlands are mapped in a special county road atlas. Each crew chief has a copy and operators of mowers and mechanical brush cutters are also provided copies. Crews and operators are instructed to stop work

when approaching a critical area and either seek advice on the allowed maintenance actions or follow the guidelines of the Regional Road Maintenance Manual.

*2004 Compliance Measures for Road and Street Maintenance*

| Facility/Activity | NPDES-Required Activity | Performance Measures | # Activities Completed |
|---|---|---|---|
| Sweeping streets | Residential 9 x/yr.; arterial 12 x/yr. | # arterial sweeper sections<br># neighborhood sweeper sections<br># times each arterial section swept<br># times each neighborhood section swept<br>percent compliance | 47<br>42<br>14<br>9<br>100 % |
| Spill response-stormwater facilities | Procedures in place | # of kits in vehicles<br># of vehicles<br>percent of vehicles w/spill kits<br># of spills reported to Ecology | 159<br>159<br>100 %<br>0 |
| Litter removal | 4 x/yr. On arterials, as needed | # times litter picked up on arterial roads | 274 |

### S5.B.8.e. Consideration of Water Quality in Flood Control Projects

Permit Requirement

*A program to include water quality management considerations into flood management projects, including a schedule for retrofitting existing projects to the extent possible.*

Summary of Compliance Activities

Clark County flood control projects are limited to small drainage maintenance and repair activities. The projects include stream-bank erosion control and water quality treatment where feasible. There were few drainage projects during the reporting period and none of a scale that made it feasible to add water quality retrofits.

### S5.B.8.f. Reduction of Water Pollution from Pesticides, Herbicides, and Fertilizers

Permit Requirement

*A program to reduce pollutants associated with the application of pesticides, herbicides, and fertilizer discharging into municipal separate storm sewers owned or operated by the permittee.*

Summary of Compliance Activities

Public Works follows the pesticide and fertilizer use practices adopted by county policy in 2000. The county adopted an environmentally responsible purchasing policy in 2000, which includes criteria for disqualifying certain pesticides. The Solid Waste Program has waste disposal and pickup programs to discourage improper disposal.

*Plan and Schedule for Minimizing WQ Impacts from Pesticides and Fertilizers*

The Clark County Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes standards and practices for use of pesticides and fertilizers. It was adopted as county policy in July 2000 and is being implemented by Public Works for stormwater facility, road, and park maintenance.

The Stormwater Facility Maintenance Manual, adopted as code in July 2000, provides guidelines for vegetation management of public and private stormwater facilities. A stormwater facility inspector inspects private facilities and provides the public with maintenance information (see S5.B.8.c.).

*Clark County Environmentally Responsible Purchasing Policy*

Clark County adopted an Environmentally Responsible Purchasing Policy in 2004 that includes a section addressing the purchase of landscaping and vegetation maintenance products which includes pesticides. The policy established a set of criteria, any of which will disqualify a pesticide from purchase. A waiver process requires further examination of the pesticide by the Environmentally Responsible Purchasing Policy Team to determine if a more environmentally friendly alternative exists. If none are found, the pesticide can be purchased and used, but with specific limiting guidelines.

*Solid Waste Program Hazardous Waste Drop Off Sites*

Public Works Solid Waste Program continued (non-education) projects to encourage proper disposal of hazardous waste including pesticides and fertilizers. The household hazardous waste and small generator waste collection and disposal program is a primary tool for reducing the amount of pesticides and fertilizers in the environment. It is discussed in greater detail under "S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement".

**S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement**

Permit Requirement

*A ongoing program to detect, remove and prevent illicit discharges and improper disposal, including spills, into the municipal separate storm sewers owned or operated by the permittee.*

1. *Each permittee shall effectively prohibit illicit discharges to the municipal separate storm sewers owned or operated by the permittee other than those authorized under a separate NPDES permit. Unless identified by either the permittee or Ecology as significant sources of pollution to water of the state, the illicit discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) need not be prohibited from entering the municipal separate storm sewers owned or operated by the permittee. As necessary, the permittee shall incorporate control measures in the stormwater management program to ensure these discharges are not significant sources of pollutants to waters of the state.*
2. *The program shall include ongoing field screening, using the methods required in 40 CFR 122.26(d)(1)(iv), or alternative methods that have been approved by Ecology. The field screening program shall focus on urbanized areas.*
3. *The program shall incorporate best management practices and procedures to prevent, contain, and respond to spills or improper disposal into the municipal separate storm drains owned or operated by the permittee.*

Summary of Compliance Activities

Clark County continues to enforce the Water Quality Ordinance adopted in November 1998, using inspections and education program for businesses and private stormwater facility inspections. Public Works has spill kits in many vehicles. Public Works also works with businesses and the general public to collect and dispose/recycle oil, hazardous waste, and moderate waste. The storm sewer screening program planned an outfall survey of urbanized parts of Whipple Creek Watershed.

*Water Quality Ordinance*

The Community Development Department's Code Enforcement Division and the Public Works Department implement the Water Quality Ordinance. Code Enforcement responds to complaints and uses both education and enforcement actions. Public Works response focuses on source control BMP information and education through site visits and inspections. This also includes routine inspection of almost all private stormwater facilities permitted after 1994. The reporting for source control and storm sewer maintenance is under component S5.B.8.c. Storm sewer O and M.

*Storm Sewer Screening*

Storm sewer screening is described as part of the monitoring program under condition S5.B.4.

*Waste Collection and Disposal Programs*

Public Works Solid Waste Program operates several programs to collect and properly dispose of hazardous waste material. Clark County believes these programs reduce the amount of waste that is improperly disposed of to storm drains, the ground, or water bodies.

*Mobile/Satellite Hazardous Waste Collection*

| | **Jan. - Dec. 2004** |
|---|---|
| Number of sites | 13 |
| Number of participants | 932 |
| Amount of household hazardous waste | 90,004 Pounds |

*Motor Oil Recycling*

| | **Jan. - Dec. 2004** |
|---|---|
| Amount of used oil collected at household hazardous waste sites | 200,400 pounds |
| Amount of used oil collected curbside | 495,000 pounds |
| Amount of used oil collected at used oil collection sites | 150,380 pounds |

*Moderate Risk Waste Collection Sites*

| | Jan. -Dec. 2004 |
|---|---|
| Number of Sites | 4 |
| Number of participants | 6,039 |
| Total hazardous waste collected at fixed sites (and paint from satellite events) | 1,377,579 pounds |
| Amount of latex paint collected for recycling | 311,054 pounds |
| Amount of latex paint recycled | 186,261 pounds |

*Curbside Pickup*

Solid waste contracts provided for curbside pick up of oil (see table above) and antifreeze (2,960 pounds in 2004). This reduces the chance that these materials will be dumped into a storm sewer or enter a water body by another route.

*Spill Response*

Public Works follows practices described in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. Public Works has limited capacity for responding to hazardous materials spills; however, spill response kits are provided for most of the Operations Division's vehicles. Awareness training is performed annually. In addition, 21 employees, representing each service area and the Salmon Creek Treatment Plant, have taken eight hours of Hazardous Materials (296-834-30005 Operations Level) training.

Spill response is coordinated through the Clark Regional Emergency Services Agency and the Department of Ecology. Policy is in place for notification of the appropriate responder for abandoned materials. Spills other than small vehicle fluid spills are referred to the Department of Ecology through the 911 system.

*2004 Spill Response Measures*

| Facility/Activity | NPDES-Required Activity | Performance Measures | # Activities Completed |
|---|---|---|---|
| Spill Response-stormwater facilities | Procedures in place | # of kits in vehicles<br># of vehicles<br>percent of vehicles w/spill kits<br># of spills reported to Ecology | 159<br>159<br>100 %<br>0 |

**S5.B.8.h. Industrial Stormwater Pollution Reduction**

Permit Requirement

*A program to reduce pollutants in stormwater discharges from industrial facilities that discharge into municipal separate storm sewers owned or operated by the permittee, and ensure compliance with local ordinances. The program shall include, but not be limited to:*

1. *Procedures to identify industrial facilities that discharge into the municipal separate storm sewers owned or operated by the permittee.*
2. *A field inspection program to assess compliance with local ordinances adopted in accordance with Special Condition S5.B.3; and*
3. *A program to monitor and control pollutants in stormwater discharges to municipal separate storm sewers owned and operated by the permittee, from industrial facilities that the permittee determines are contributing a substantial pollutant loading to municipal separate storm sewers. For industrial facilities which require coverage under Ecology's "Baseline General Permit for Stormwater Discharges Associated with Industrial Activity," this program shall be developed jointly with Ecology.*

Summary of Compliance Activities

There is relatively little industrial area in unincorporated Clark County. Industrial sites are generally scattered individual operations, small industrial areas, or gravel mining and processing facilities covered by state waste discharge permits. County actions are limited to those described here and actions described for private storm sewer inventory, inspection, and maintenance requirements for Component S5.B.8.c. and Component S5.B.8.g.

*Inventory*

At one point, Water Resources maintained an inventory of businesses subject to the Water Quality Ordinance using the stormwater fee billing database and Assessor's office records of parcel land use. However the land use data was not reliable and use of this inventory was discontinued. Currently, Water Resources visits sites based on an informal system of revisiting sites during routine area visits.

The private stormwater facility inspection inventory includes almost all industrial sites permitted after 1994.

*Field Inspection*

The storm sewer maintenance and source control inspections are described under S5.B.8.c.

*Industrial Stormwater Compliance*

Dry weather storm sewer screening, source control inspections, and storm sewer maintenance inspections suggest that there are few if any industrial sites that *"contribute substantial pollutant loading"* beyond typical commercial sites.

Pollution problems for facilities covered by NPDES industrial stormwater permits are referred to the Department of Ecology for enforcement. Water Resources informally coordinates compliance with the Ecology Southwest Region NPDES industrial stormwater permit inspector and Vancouver Field Office staff. Clark County made no industrial stormwater permit referrals to Ecology during 2004.

## S5.B.8.i. Education to Reduce Stormwater Pollution

Permit Requirement

*An education program aimed at residents, businesses, industries, and employees of the permittee whose job functions may impact stormwater quality. An education program may be developed locally or regionally. The program shall include: Education on the proper use and disposal of pesticides, herbicides, and fertilizers; training of construction contractors and developers on developing stormwater site plans and BMPs for construction activities; efforts to explain the definition and impacts, and promote proper management and disposal of used oil and toxic materials.*

Summary of Compliance Activities

The Solid Waste Program, Water Resources Program, and ESA Program perform numerous activities to promote pesticide and fertilizer reduction, proper waste disposal, and source control BMPs through education. The Community Development Department requires certification training for erosion control contractors. No program exists for training regarding site plans because they are required to be signed by licensed professional engineers. Several activities, such as Watershed Stewards and Living on the Land, promote pollution and stormwater quality improvement through watershed stewardship.

*Waste Reduction and Environmental Information and Education*

Public Works Solid Waste Program conducts activities aimed at proper management and disposal of hazardous waste and reducing hazardous or toxic materials use. Several of these activities focus on promoting water resources protection and sound environmental practices by businesses. The county also supports and participates in regional programs such as the Environmental Information Cooperative and numerous special events.

*Small Quantity Hazardous Waste Generator Assistance Program*

Public Works Solid Waste Program collects and disposes of large amounts of household hazardous waste from Clark County residents. These activities are reported in collection activities. Solid Waste Program staff also provide technical assistance to businesses that generate small quantities of hazardous waste.

| Small Quantity Waste Generator Action | Jan. - Dec. 2004 |
|---|---|
| Number of phone inquiries | 61 |
| Number of business site visits | 19 |

*Stormwater Specific Information and Education*

Water Resources has one specialist working mainly on stormwater technical assistance for businesses and homeowners. This activity is also reported as a private stormwater system maintenance and source control requirement under S5.B.8.c. In addition, 34 residential source control complaints were addressed.

| Action | Jan. – Dec. 2004 |
|---|---|
| Number of businesses visited | 85 |

*Pesticide Reduction Education/Mother Natures Garden Puppet Shows*

Since 2000, Clark County has operated a traveling puppet show that brings fertilizer and pesticide reduction education to about 6,000 elementary school students each year. In addition to the presentations, approximately 282 sets of classroom materials were distributed.

Clark County Solid Waste section, in partnership with WSU Extension – Clark County, developed the Naturally Beautiful Backyard Program, providing workshops on natural gardening and rain gardens.

| Action | Number of presentations | Total Participants during Jan. - Dec. 2004 |
|---|---|---|
| Mother Natures Presentations | 93 at 32 sites | 7,551 |

*Environmental Information Cooperative*

Clark County is one of six partners that support the Environmental Information Cooperative (EIC), which provides coordinated environmental education. The EIC provides programs to school children and teachers throughout Clark County. This includes the River Rangers presentations to primary school classes and a new education program *Macroinvertebrates as Indicators of Water Quality*. A lending library of environmental books, curriculum, and videos is also maintained.

| Environmental Information Cooperative Activity | Total Participants during Jan. - Dec. 2004 |
|---|---|
| Columbia River Watershed Festival participants | 2,100 |
| Number of children reached by Macroinvertebrate program | 230 |
| Number of children reached by Enviroscape presentations | 3,669 |
| Number of children reached by groundwater presentations | 120 |
| Number of children reached by River Rangers presentations | 1,921 |
| Number of children/adults reached by Aquatic Bugs educational kit | 57 |
| Educators reached with Aquatic Bugs workshop | 15 |
| Educators reached by Project Wet workshop | 12 |
| Number of environmental materials checked out from lending library | 1,450 |
| Number of printed materials and electronic items distributed | 2,700 |

*Watershed Stewards Program*

Clark County funds a full-time position to implement the Watershed Stewards Program at Washington State University Extension. The Watershed Stewards Program trains volunteers in watershed and water quality protection. These volunteers, in turn, contribute back to the community by educating the public at community events and fairs, guiding

students and adult volunteers in tree plantings, conducting stream monitoring projects, and a variety of other activities.

The Watershed Stewards Program focuses mainly on adult involvement while the EIC is aimed at children. The Watershed Stewards program offers two 10-week training sessions during the year.

*Watershed Stewards Measures*

| MEASURE | TOTAL PARTICIPANTS DURING Jan. – Dec. 2004 |
|---|---|
| Number of Watershed Stewards training groups | 2 |
| Number of Watershed Stewards trained | 28 |
| Number of volunteer hours contributed | 2,352 |
| Number of public contacts | 5,643 |

*Regional Coalition for Clean Rivers and Streams*

Clark County actively participates in the Regional Coalition for Clean Rivers and Streams. In 2004, a regional campaign entitled *"Is your lawn chemical free? Maybe it should be"* featuring a picture of a child laying in the grass ran in the Portland Metropolitan and Clark County areas. The campaign included sixteen major newspaper ads, twelve ads in weekly papers, 55 Tri-Met and C-Tran bus "tailboards" and 90 interior bus cards in the Portland-Vancouver area. More information is available at the internet site: http://www.cleanriversandstreams.org.

*Small Acreage Program – Living on the Land*

Clark County, in partnership with Washington State University Extension and the Clark Conservation District, funds a full-time position to implement an outreach program for small acreage land owners. This program uses both the *Living on the Land: Stewardship for SmallAacreages* curriculum and other stand-alone workshops to educate small acreage landowners about managing their properties to reduce quantity and improve the quality of stormwater runoff from their properties.

The program completed two *Living on the Land* 12-week class series, five septic system workshops, and one rural acreage stormwater best management practices workshop. The program also had a booth at the Clark County Fair. The program also produced four original fact sheets for public distribution.

An impact evaluation survey of *Living on the land* participants was conducted. Preliminary results indicate considerable changes in knowledge level and the implementations of BMPs. In addition, the data also show that graduates of the *Living on theLland* course shared what they learned with their friends, neighbors and coworkers.

*Small Acreage Program Measures*

| MEASURE | TOTAL PARTICIPANTS DURING Jan. – Dec. 2004 |
|---|---|
| Number of Living on the Land 12-week series | 2 |
| Number of participants | 83 |
| Number of septic and BMP workshops | 5 |
| Number of participants | 128 |
| Number of BMP workshops | 1 |
| Number of participants | 16 |
| Number of farm tours | 4 |
| Number of farms identified for signage | 9 |
| Number of requests for assistance | 387 |
| Contacts at community events | 2,055 |
| Original fact sheets produced | 4 |

*River Heroes*

In 2004, Clark County contracted with a professional storyteller to provide *River Heroes,* an environmental storytelling school assembly program for kindergarten through 6th grade. Between October and December 2004, over 4,100 students were reached. A *River Heroes* CD was also produced and distributed to teachers and libraries at schools booking a presentation.

*River Heroes Performance Measures*

| MEASURE | TOTAL PARTICIPANTS DURING Jan. – Dec. 2004 |
|---|---|
| Number of students reached | 4,100 |
| Number of teachers reached | 179 |
| Number of schools/presentations | 9/18 |

*Student Water Quality Monitoring Program*

Clark County provides funding support to expand the city of Vancouver's Student Water Quality Monitoring Program into schools in unincorporated Clark County. Students and teachers are mentored during classroom and monitoring site visits as well as provided monitoring equipment. In 2004, students, facilitators and community members participated at the annual Watershed Congress to share the results of their water quality monitoring projects.

In addition, Clark County funds the Student Watershed Research Project (SWRP) at three high schools in Clark County. SWRP staff work with students and teachers, providing support for upper-level water quality monitoring projects in the Portland and Clark County area. In addition to recruiting three teachers to participate, SWRP staff provided classroom instruction at participating schools in macroinvertebrates (4 sessions), habitat assessment (2 sessions), data analysis training (10 sessions), water quality training (10 sessions), and an introduction to watersheds and monitoring (2 sessions). A total of 370 students participated in the program.

*Student Water Quality Monitoring Program Measures*

| MEASURE | TOTAL PARTICIPANTS DURING Sept. 2003 – June 2004 |
|---|---|
| Student classroom contacts – Vancouver monitoring program | 1,469 |
| Annual Watershed Congress participants | 166 |
| Students participating in the SWRP Program | 370 |
| Number of SWRP training sessions | 30 |
| Schools participating in the SWRP Program | 3 |

*Children's Clean Water Billboard Art Contest*

Clark County conducted a children's billboard art contest during November 2003 through April 2004. Entry forms and rules were distributed to nine school districts and all private schools in unincorporated Clark County. Twenty-four schools from six school districts participated with a total of 656 entries. Four winning entries were selected to appear on commercial billboards for 90 days in 2004. Total public impressions (viewings) of the billboards was 123,100.

*Children's Clean Water Billboard Art Contest Performance Measures*

| MEASURE | TOTAL PARTICIPANTS DURING Jan. – Dec. 2004 |
|---|---|
| Number of contest entries | 656 |
| Number of participating schools | 24 |
| Number of participating school districts | 6 |
| Number of advertising impressions | 123,100 |

*Community Events*

Outreach and education included several annual community events such as the Annual Home and Garden Fair (3 days), the Clark County Fair (10 days), and the Lacamas Watershed Festival (1 day).

*Storm Drain Stenciling*

Clark County provides materials and stencils to volunteers for an ongoing storm drain stenciling project. Coordination of this effort is now part of the Watershed Stewards Program. In 2004, four groups, including students from the Washington State School for the Blind, stenciled more than storm drains, primarily in the Felida and Salmon Creek areas.

*Clean Water Brochures*

Clark County produced a new Clean Water Program overview brochure which describes non-point source pollution and includes a tear-out card of tips to protect water quality. A brochure promoting reduced use of fertilizers and pesticides through the use of native plants was also printed for distribution at fairs and community events.

*Erosion Control Certification Training*

Beginning January 1, 2001, County code requires all development contractors to be trained and certified in erosion and sediment control by an organization recognized by the

Community Development Department Director. The program has certified 923 people in Clark County as of early 2005.

**Status of Condition S9 Scheduled Actions**

Special Condition S9 listed specific new activities with implementation schedules before the current reporting period. This section lists the activities and their schedule status.

| **Requirement** | ***Schedule*** | ***Status*** |
|---|---|---|
| S9.A.1. Stormwater equivalence to the Puget Sound Manual | Adopted by 7/31/00 | In place 7/28/00 |
| S9.A.2. Storm sewer maintenance ordinance | Adopted by 7/31/00 | In place 7/28/00 |
| S9.A.3. Add 1FTE code enforcement officer | In place 8/31/99, | In place 8/31/99 |
| S9.A.3. Add 1FTE code enforcement officer if work load dictates | In place 2/28/00 | In place 2/28/00 |
| S9.A.4. Add 1 FTE erosion control inspector for Building | 3/31/00 | In place 3/31/00 |
| S9.A.4. Add 1 FTE erosion control inspector for Dev. Serv. | 3/31/00 | In place 3/31/00 |
| S9.A.5. Add 1 FTE stormwater facility inspector for new development | 7/31/00 | In place 7/00 |
| S9.A.6. Implement Water Quality Ordinance | System in by 7/31/00 | Began 7/00 |
| S9.B.1. Increase street sweeping to specified standards | Start 8/31/99 | Began 8/99 |
| S9.B.2. Increase swale maintenance to standards | Start 8/31/99 | Began 8/99 |
| S9.B.3. Implement inspection and maintenance program for R/D facilities | Start 3/31/00 | Began 3/00 |
| S9.B.4. Implement roadside ditch and culvert maintenance standards | Start 3/31/00 | Began 3/00 |
| S9.B.5. Add 1FTE for private facilities inspection | Start 7/31/00 | In place 6/00 |
| S9.B.6. Develop spill response program | In place 7/31/00 | Began 6/00 |
| S9.B.7. Perform storm pipe maintenance to standards | Start 3/31/00 | Began 3/00 |
| S9.B.8. Begin yearly catch basin inspection and cleaning | Start 8/31/99 | Began 8/99 |
| S9.B.9. Begin 5-year drywell cleaning cycle | Start 3/31/00 | Began 3/00 |
| S9.B.10. Establish computer-based maintenance tracking | In place 12/31/00 | System in Place 1/00 |
| S9.B.11. Develop a program to map private storm sewers and track maintenance | In place 7/31/00 | In place |
| S9.C.1. Establish a centralized SWMP database | In place 12/31/00 | Database implemented in 2004 |
| S9.C.2. Establish GIS storm sewer maintenance program | In place 12/31/00 | Storm infrastructure data entry ongoing |
| S9.C.3. Regulatory program monitoring project | In place 7/31/00 | Ordinance tracking in place 7/00 |
| S9.C.4. Establish storm sewer screening | In place 7/31/00 | In place 7/00 |
| S9.C.5. Watershed Characterization program schedule | Drafted by 7/31/00 | Ongoing, projects began in summer 2001 |
| S9.D.1. Permit funding strategy | Ordinance by 9/31/00 | Completed 10/99 |
| S9.D.2. Lawn campaign | In place 12/31/99 | In place 12/99 |
| S9.D.3. Add 2 FTE for stormwater specific education | In place 7/31/00 | Completed 4/00 |
| S9.D.4. Add 1 FTE for Watershed Steward program | In place 7/31/00 | In place 11/99 |
| S9.D.5. Add ½ FTE for River Ranger program | In place 3/31/00 | In place 8/99 |
| S9.D.6. County policy on pesticide and fertilizers | In place 7/31/00 | In place 7/00 |
| S9.E.1. Establish capital improvement program | Begin by 8/31/00 | Project selection, design, and construction continued in 2004 |

## 2. NOTIFICATION OF CHANGE IN PERMIT AREA

During 2004, the Department of Assessment and GIS reported that there were five annexations. These resulted in transfer of 594 acres from unincorporated Clark to the municipalities of Vancouver, Battle Ground, Camas, and Washougal. Most of this land was undeveloped. One annexation to the City of Camas was 192 acres of developed residential area that included three county stormwater facilities and about two miles of county right-of-way.

These annexations have no significant influence on the county program.

## 3. DIFFERENCES BETWEEN PLANNED AND ACTUAL EXPENDITURES BY COMPONENT.

The permit asks for a description of:

*Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP.*

Summary of Compliance Actions

This report includes tables showing:

- Estimated budget and expenditures for 2004 by Program Element and
- Estimated yearly expenditures by Permit Component.

It is not possible to track every dollar spent on NPDES permit compliance because no systems were in place to separately track many of the pre-permit stormwater activities.

Also, the county budget does not have sufficient detail to report by permit component. For activities funded by the stormwater fee, there is a defined county budget, but for activities not funded by the stormwater fee, it is not possible to separate budget for stormwater permit required activities.

Clark County follows a biennial budget process (2003-2004 calendar years). Where permit activities have a defined budget from stormwater fees, an estimate of the 2004 budget is one-half the biennial budget.

Ongoing pre-permit activities had a recognized revenue source, such as development fees, when the permit was issued in 1999. New activities had no established revenue source until October 1999, when the Board of Clark County Commissioners adopted a stormwater fee and established the Clean Water Program Fund. Ongoing, pre-permit stormwater program activities are often difficult to separate from non-stormwater activities because that was not an issue when expense tracking systems were set up. New activities billed to the Clean Water Program Fund have expense reporting categories tagged to individual permit components. However, expenses for enhancements of ongoing pre-permit activities, such as increased erosion control inspections on building

projects, are not tracked separately from other concurrent non-stormwater site inspections.

*Estimated Budget and Expenditures by Program Element*

The estimated 2004 budget includes ongoing pre-permit activities and new permit-required activities that are billed to the Clean Water Program Fund (or stormwater fees). The county budget does not provide the level of detail required to separate budget by components or activity.

Except for ongoing regulatory program activities and stormwater retrofits by road projects, expense tracking generally provides detail by component or the projects and activities within a component. Due to this, expense tracking is much more reliable than budgets for reporting purposes.

Ongoing pre-permit activities continue at about pre-permit levels. Costs for operation and maintenance of stormwater facilities and roads can vary by season and from year to year depending on weather. For example, extremely wet weather or large storm events can greatly increase costs for emergency actions and repairs, while dry weather decreases costs. Several late 1990s projects included in the pre-permit budget were completed in 2001 and dropped from subsequent budgets.

The Monitoring and Evaluation Program Element and Administration are entirely included in the Clean Water Program Fund budget. Program administration includes program costs such as manager's time, the annual permit fee, annual permit report to Ecology, and stormwater fee collection. The budgets for these program elements are one half the Program Element budget for 2003-2004.

The stormwater capital improvement program is included in the Clean Water Fund budget. In addition, the Public Works Road Fund had estimated expenditures of about $3,700,000 to provide stormwater controls for older roads being completely replaced by new roads. Since the Transportation Capital Improvement Program does not have a specific budget for stormwater retrofits, no budget amount is provided for that activity.

The Regulatory, Operations and Maintenance, and Public Involvement and Education Program Elements include budget from the Clean Water Program Fund and other previously existing revenue sources such as development fees, the Road Fund, and the Solid Waste Fund. For these program elements, ongoing pre-permit activity budgets are estimated as the sum of NPDES-required activities from year-1 baseline in the Stormwater Management Program (April 1999) and one half of the 2003-2004 Clean Water Program Fund budget.

Expenditures for O and M, Monitoring and Evaluation, Public Involvement and Education, and Administration are from the county accounting system and project billings. The Regulatory Program and Capital Program include estimates for expenditures on projects and activities not tracked separately for the NPDES permit.

The Clean Water Program Fund had a reserve balance of $8,438,510 at the end of 2004. County regulations require the balance to be placed in reserve for stormwater capital improvement projects.

*Estimated SWMP Budget and Expenditures by Program Element*

| ***SWMP Program Element*** | ***Est. 2000 Budget*** | ***Est. 2000 Expend.*** | ***Est. 2001 Budget*** | ***Est. 2001 Expend.*** |
|---|---|---|---|---|
| Regulatory Program | $ 1,813,542 | $ 1,621,799 | $ 1,454,242 | $2,016,242 |
| Operation and Maintenance | 1,895,997 | 2,085,268 | 2,325,858 | 2,250,005 |
| Monitoring and Evaluation | 434,180 | 204,874 | 595,883 | 428,763 |
| Public Involvement and Education | 1,050,327 | 776,589 | 923,124 | 1,058,034 |
| Capital Improvements | 670,610 | 2,240412 | 303,618 | 792,948 |
| Administration/Coordination | 643,695 | 860,983 | 382,402 | 386,375 |
| **Totals** | **$6,508,351** | **$7,789,925** | **$5,985,127** | **$6,932,367** |
| Accumulated Cash Reserve for Stormwater Projects | | $1,906,796 | | $4,366,313 |

*Estimated SWMP Budget and Expenditures by Program Element*

| ***SWMP Program Element*** | ***Est. 2002 Budget*** | ***Est. 2002 Expend.*** | ***Est. 2003 SWMP Budget*** | ***Est. 2003 County Expend.*** |
|---|---|---|---|---|
| Regulatory Program | 1,745,555 | 2,005,196 | 1,439,392 | 2,282,283 |
| Operation and Maintenance | 2,453,506 | 1,653,523 | 2,254,483 | 1,804,015 |
| Monitoring and Evaluation | 597,608 | 590,480 | 676,408 | 784,973 |
| Public Involvement and Education | 881,592 | 1,345,065 | 1,056,084 | 1,240,489 |
| Capital Improvements | 559,124 | 622,939 | 1,562,127 | 5,540,192 |
| Administration/Coordination | 296,220 | 335,762 | 505,589 | 338,512 |
| **Totals** | **$6,533,605** | **$6,552,965** | **$7,494,083** | **$11,990,464** |
| Cash Reserve for Stormwater Capital Improvement Projects | | $6,106,067 | | $7,173,284 |

| ***SWMP Program Element*** | ***Est. 2004 Budget*** | ***Est. 2004 Expend.*** |
|---|---|---|
| Regulatory Program | 1,439,392 | 2,478,959 |
| Operation and Maintenance | 2,254,483 | 1,871,681 |
| Monitoring and Evaluation | 676,408 | 1,021,675 |
| Public Involvement, Education, | 1,008,084 | 1,504,394 |
| Capital Improvements | 1,562,127 | 4,600,708 |
| Administration/Coordination | 505,589 | 312,221 |
| **Totals** | **$7,446,083** | **$11,789,638** |
| Cash Reserve for Stormwater Capital Improvement Projects | | $8,438,510 |

*Estimated Annual Expenditures by Permit Program Component*

Stormwater program components are defined by the permit as specific requirements to develop and implement the stormwater management program. Components S5.B.2., S5.B.3., and S5.B.5. few or no expenses during 2004 because they were completed to develop the 1998 stormwater management program for the permit application. Other

components had few or no expenses because activities are conducted under other components. For example, testing and screening for non-stormwater discharges from industrial facilities under component S5.B.8.h. is actually included in the monitoring program (S5.B.4.). Component S5.B.8.e., consideration of stormwater treatment in flood control projects usually has little or no expense because there are few significant flood control projects in Clark County. Condition S9 components are included in the broader S5.B. components.

This report modifies the expense reported in 2003 where an error was found in the 2003 road and highway O and M.

Regulatory program expenditures continued to rise slightly.

Overall storm sewer and road O and M expenditures are near to 2003 levels. Generally, new O and M activities have been performed at less expense than anticipated when the original SWMP budget was drawn up.

The monitoring program continues to grow. 2004 expenditures reflected two grant projects, one for watershed characterization and another to develop a wetland inventory atlas.

Education activities expanded for a number of projects and activities.

The stormwater capital improvements were less than in 2003 mainly because the Water Resources Program did not build any large stormwater projects during 2004. Retrofits as a part of road projects continued at about the same pace as in 2003.

Administrative expenses appear to have leveled off after establishment of the stormwater fee billing system in 2000.

*Estimated Yearly Expenditures by Permit Component*

| *Component* | *Aug. to Dec. 1999* | *2000* | *2001* | *2002* | *2003* | *2004* |
|---|---|---|---|---|---|---|
| **Regulatory Program** | | | | | | |
| S5.B.8.a. New Development, Redevelopment and Construction Site Runoff | 450,140 | 1,621,799 | 2,016,242 | 2,005,196 | 2,282,283 | 2,478,959 |
| **Operations and Maintenance** | 0 | | | | | |
| S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers | 675,052 | 1,295,186 | 1,464,892 | 1,132,333 | 981,750 | 1,063,781 |
| S5.B.8.d. Operation and Maintenance of Roads and Highways | 312,621 | 790,082 | 785,113 | 521,190 | 425,575 | 807,900 |
| **Monitoring and Evaluation** | | | | | | |
| S5.B.4. Monitoring Program | 58,306 | 102,926 | 174,527 | 452,868 | 555,207 | 629,532 |
| S5.B.6. Storm Sewer Mapping and Data Maintenance | 0 | 101,948 | 254,236 | 137,612 | 229,766 | 392,143 |
| **Public Involvement and Education** | | | | | | |
| S5.B.1. Comprehensive Planning Process | 8,787 | 24,405 | 52,009 | 23,117 | 33,466 | 27,844 |
| S5.B.2. Management Needs and Priorities | 0 | 0 | 0 | 0 | 96 | 3 |
| S5.B.7. Watershed-wide Coordination | 0 | 160 | 3,599 | 12,016 | 11,749 | 8,855 |
| S5.B.8.f. Reduction of water pollution from pesticides, herbicides and fertilizers | 0 | 162 | 26,146 | 73,899 | 79,571 | 75,181 |
| S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement | 166,573 | 286,658 | 319,184 | 350,292 | 321,506 | 408,761 |
| S5.B.8.h. Industrial Stormwater Pollution Reduction | 0 | 0 | 0 | 51 | 0 | 0 |
| S5.B.8.i. Public Education | 211,019 | 489,609 | 709,105 | 885,690 | 794,101 | 983,750 |
| **Capital Improvements** | | | | | | |
| S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting) | 21,113 | 2,237,646 | 785,804 | 622,505 | 5,540,192 | 4,600,708 |
| S5.B.8.e. Consideration of Water Quality in Flood Control Projects | 0 | 2,766 | 7,144 | 434 | 0 | 0 |
| **Administration** | | | | | | |
| Program Administration/Coordination/Overhead (no component) | 156,227 | 836,578 | 334,366 | 335,762 | 338,512 | 312,221 |
| S5.B.3. Legal Authority | 0 | 0 | 0 | 0 | 0 | 0 |
| S5.B.5. Fiscal Analysis | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **$2,059,834** | **$7,789,925** | **$6,932,367** | **$6,552,965** | **$11,593,774** | **$11,789,638** |

## 4. REVISIONS TO THE SWMP FISCAL ANALYSIS

Clark County's 1998 SWMP included financial analysis for a five-year program. Ecology wrote a permit to cover the period of August 1999 to December 31, 2000 (subsequently extended until a replacement is issued). The 1999 permit included several proposed (not funded) activities in the five-year SWMP, and listed them in Special Condition S9. A revised SWMP, including the five-year fiscal analysis will be drafted following issuance of the next permit.

## 5. SUMMARY AND ANALYSIS OF THE CUMULATIVE MONITORING DATA COLLECTED THROUGHOUT THE TERM OF THE PERMIT

All monitoring activities are described under Status of Permit Component S5.B.4. That section reports summary metrics for water quality, macroinvertebrates, and stream temperature loggers collected during the permit term.

In June 2004, Water Resources published the Stream Health Report, which includes informational maps that summarize analysis of stream and lake health data collected before and after permit issuance. Macroinvertebrate, water chemistry, and fecal bacteria data for many stream segments was reduced to a single stream health category. Where there was no field information, a probable health category was assigned from regression analysis of observed stream health scores, versus the percent drainage basin forest cover and percent drainage basin total impervious area. The Stream Health Report can be viewed on the county Internet site at:
http://www.clark.wa.gov/water-resources/stream.html

## 6. SUMMARY OF COMPLIANCE ACTIVITIES

Information describing compliance activities, including the nature and number of official enforcement actions, inspections, and types of public education activities are included in the sections describing the status of each permit component.

## 7. IDENTIFICATION OF KNOWN WATER QUALITY IMPROVEMENTS OR DEGRADATION

A limited analysis of three years of temperature data showed that several Long-Term Index Sites (Component S5.B.4.) show that increasing numbers of days have maximum temperatures above the criteria of 64 degrees or 70 degrees Fahrenheit. The reasons for this increase in temperatures are not known; however, it is suspected that some streams are more susceptible to heating during drought years due to geology, hydrology, and land cover. The water years 2002 though 2004 were dryer than normal and 2004 was a particularly dry year, at about 67 percent of normal rainfall at WSU Research Station in Vancouver.

*LISP Site temperature data logger results as numbers of days exceeding standard temperatures*

| | | 2002 | | 2003 | | 2004 | |
|---|---|---|---|---|---|---|---|
| **Site Name** | **Stream** | **Days > 64° F** | **Days > 70° F** | **Days > 64° F** | **Days > 70° F** | **Days > 64° F** | **Days > 70° F** |
| CGR020 | Cougar Creek | 1 | 0 | 0 | 0 | 3 | 0 |
| CUR020 | Curtin Creek | 0 | 0 | 0 | 0 | 0 | 0 |
| MIL010 | Mill Creek | 23 | 0 | 36 | 0 | 57 | 1 |
| BRZ010 | Breeze Creek | 22 | 0 | 33 | 0 | 58 | 2 |
| RCN050 | Rock Creek North | 37 | 6 | 40 | 1 | 67 | 31 |
| CHL010 | Chelatchie Creek | 12 | 0 | 24 | 0 | 22 | 0 |
| JNS060 | Jones Creek | 0 | 0 | 0 | 0 | 0 | 0 |
| MAT050 | Matney Creek | 39 | 4 | 66 | 6 | 59 | 22 |
| GEE050 | Gee Creek | 56 | 9 | 65 | 4 | 68 | 4 |
| WPL050 | Whipple Creek | 23 | 0 | 47 | 0 | 61 | 2 |

## 8. WATERSHED-WIDE COORDINATION AND ACTIVITIES

Activities to coordinate watershed protection are listed in Status of Permit Component S5.B.7. WSDOT is the only other municipal permittee in Clark County.